CradlePoint Antenna Ordering and Installation Guide

CradlePoint has tested and certified that the following antennas provide the best mobile broadband performance with CradlePoint embedded and integrated modem products. These antennas work with all AER, ARC, and COR models that include an integrated modem, but in some cases may not be optimized for all frequency bands for a particular model (see individual antenna specs).

In most cases a single antenna connected to the main (primary) antenna port will provide sufficient gain. To see "true" 4G speeds on LTE – or better performance – 2 external antennas may be used (e.g., 2 antennas may provide 15 Mbps throughput and 1 antenna may only provide 8 Mbps throughput).

ANTENNA	IMAGE	MSRP	AER, ARC, and COR Models Supported	Connector Included?
Universal 3G/4G/LTE replacement antenna w/ SMA connector Part # 170649-000 3 dBi gain max		$14.99	All	Yes
12" Mag-mount antenna, 12.5' cable Part # 170605-000 6.1 dBi gain max		$44.99	All, but does not support 2600 MHz (Europe models)	Yes (includes 12.5' cable)
4" Mini mag-mount antenna, 12.5' cable Part # 170606-000 3.1 dBi gain max		$29.99	All, but does not support 2600 MHz (Europe models)	Yes (includes 12.5' cable)
Omni-directional Antenna Part # 170586-000 5.1 dBi gain max		$99.99	All, but does not support 2600 MHz (Europe models), and poor performance for 2100 MHz	No – requires separate cable/connector
Directional Patch Part # 170587-000 10.6 dBi gain max		$99.99	All	No – requires separate cable/connector
Directional Yagi Part # 170588-000 10.5 dBi gain max		$99.99	All	No – requires separate cable/connector

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Required Parts and Mounting

ANTENNA	REQUIRED: Connectors to attach antenna to CradlePoint		Pole/Mast Mount (Pole not included)	OPTIONAL: Wall Mount	SUGGESTED: Cable Clamps	SUGGESTED: Lightning Protection
	Cable OR	Adapter				
12” Mag-mount antenna Part # 170605-000	12.5 feet included	Includes SMA Male	Magnetic mount	Must be vertical		
4” Mini mag-mount antenna Part # 170606-000	12.5 feet included	Includes SMA Male	Magnetic mount	Must be vertical		
Omni-directional Antenna Part # 170586-000	Sold Separate N Male/SMA Male	Sold Separate N Male/SMA Male	Included	Included	Sold Separate	Sold Separate
Directional Patch Part # 170587-000	Sold Separate N Male/SMA Male	Sold Separate N Male/SMA Male	Included	Sold Separate (includes pole to mount to wall)	Sold Separate	Sold Separate
Directional Yagi Part # 170588-000	Sold Separate N Male/SMA Male	Sold Separate N Male/SMA Male	Included	Sold Separate (includes pole to mount to wall)	Sold Separate	Sold Separate

- The Mag-mount antennas (for vehicles or kiosks) can be attached to CradlePoint as shipped with 12.5 feet of cable and the correct SMA male connector.
- **Low loss coax cable with the N Male to SMA Male connectors OR an N Male to SMA Male adapter is REQUIRED to attach the outdoor mount antennas to CradlePoint.**

CradlePoint recommends JEFA Tech LL400-Flex cable with N Male, SMA Male connectors (not sold by CradlePoint). CradlePoint has tested and certified 20 and 50 foot cables from JEFA Tech (jefatech.com/category/cradlepoint). Loss is approximately 6 dB per 100 feet of cable (3 dB per 50 feet, 1 dB per 20 feet). For orders of 500+ units CradlePoint may be able to source cable at competitive prices.

If you don’t require a longer cable, an **N Male to SMA Male adapter** can be purchased. JEFA Tech offers one: jefatech.com/category/cradlepoint. The outdoor antennas only come with about 8 inches of cable.

CradlePoint recommends using **cable clamps** or other cable holding mechanism to secure low loss cable against the wall or pole. At least two clamps are recommended on the cable near the CradlePoint router. This construction helps reducing stress on cable/modem connector and increases product reliability. JEFA Tech provides a ½” cable clamp: jefatech.com/category/cradlepoint.

Extra care must be taken while attaching the cable to the modem. **Be careful not to over-torque the SMA connector on the modem.** Finger tight is sufficient (the maximum torque spec is 7kgf-cm)**.**

Lightning protection is also suggested (ensure you have correct connections). jefatech.com/category/cradlepoint

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Antenna Main and Auxiliary Ports

In most cases a single antenna connected to the main antenna port will provide sufficient gain. To see “full” 4G speeds on LTE or for enhanced performance on any modem, 2 external antennas may be used.

Extra care must be taken while attaching the cable to the modem. **Be careful not to over-torque the SMA connector on the modem.** Finger tight is sufficient (the maximum torque spec is 7kgf-cm).

If using only a single antenna, you may want to turn off the auxiliary antenna port. Log into the administration pages and go to **Internet** → **Connection Manager**. Select the desired modem and click **Edit**. Select the **Modem Settings** tab. Deselect **Enable Aux Antenna** and click **Submit**.

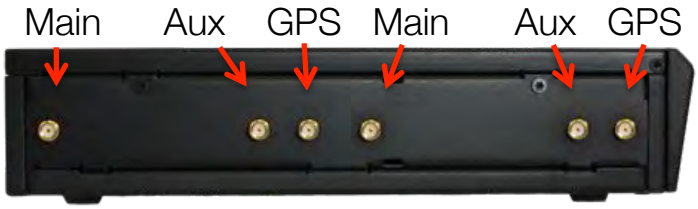
ARC Models – LPE and LP3 versions

COR Models (all)

ARC Models – all other versions

COR Models – PWD versions
(WiFi & GPS side)

AER Models (all)



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CradlePoint Antenna Ordering and Installation Guide

12” Mag-mount antenna with 12.5 foot cable

Part # 170605-000
6.1 dBi gain max

For use with all AER, ARC, and COR products with integrated modems.

NOTE: LTE band 7 (2600 MHz) not covered, which affects some international versions (LP2 and LP3 models).

Features

- Connect directly to CradlePoint with included cable and connector
- Multi-band versatility
- Easy to install 12" Magnet Mount Antenna
- Removable – transfer from one vehicle to another
- Omni-directional
- Weatherproof
- Made of stainless steel
- Requires metal mount plane (minimum 3.5 in. diameter)
- 12.5 feet of cable

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12” Mag-mount antenna with 12.5 foot cable

How It Works

CradlePoint’s Dual-Band Omni-Directional Antenna will collect the cell tower signal and send it through the cable to the integrated or embedded CradlePoint modem and router. When the modem transmits, the signal is transferred directly to the antenna and broadcasted back to the cell tower.

Installing the Magnet-Mount Antenna

Attach the Magnet-Mount Antenna to any metal area on top of the roof of the vehicle. The best location is clear of obstacles and as high on the vehicle as possible. Although small, the rare earth magnet is quite strong and won’t fall off at high speeds. Make sure the area under the magnet is clean so as not to damage the vehicle’s paint and to ensure a strong connection. Bring the cable into the vehicle through a door frame – the cable is protected by the door’s rubber molding. Do not run the cable through a window because when the window is rolled up and the door is opened the antenna cable will be pulled – this is likely to destroy your antenna and/or scratch your paint. Connect the magnet-mount antenna cable to the CradlePoint router antenna port.

30-Day Money-Back Guarantee

All CradlePoint products are protected by CradlePoint’s 30-day money-back guarantee. If for any reason the performance of any product is not acceptable, simply return the product directly to the reseller with a dated proof of purchase.

90-Day Warranty

CradlePoint antennas are warranted for ninety (90) days against defects in workmanship and/or materials. Warranty cases may be resolved by returning the product directly to the reseller with a dated proof of purchase.

Antennas may also be returned directly to CradlePoint at the consumer’s expense, with a dated proof of purchase and a Returned Material Authorization (RMA) number supplied by CradlePoint. CradlePoint shall, at its option, either repair or replace the product. CradlePoint will pay for delivery of the repaired or replaced product back to the original consumer if located within the continental U.S.

This warranty does not apply to any antennas determined by CradlePoint to have been subjected to misuse, abuse, neglect, or mishandling that alters or damages physical or electronic properties.

Antenna Specifications

Part Number: 170605-000

Frequency Range: 700–800 MHz, 824–894 MHz, 880–960 MHz, 1710–1880 MHz, 1850–1990 MHz, 2110–2170 MHz

Impedance: 50 ohms

Antenna Gain: 700–800 MHz, 1.9 dBi / 824–894 MHz, 5.12 dBi / 880–960 MHz, 3.1 dBi / 1710–1880 MHz, −4.0 dBi / 1850–1990 MHz, 6.12 dBi / 2110–2170 MHz, 2.3 dBi

Radiation: Omni-directional

Polarization: Vertical

Ground Plane: Metal Ground Plane required (minimum 3.5 inch diameter)

Connector: SMA Male

Material: Whip – Stainless Steel

Coaxial Cable: RG174 12.5 feet / 3.8 meters

Height: 12.25 inches / 31 cm

Mount: Rare earth magnet

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CradlePoint Antenna Ordering and Installation Guide

4” Mini mag-mount antenna with 12.5 foot cable

Part # 170606-000
3.12 dBi gain max

For use with all AER, ARC, and COR products with integrated modems.

NOTE: LTE band 7 (2600 MHz) not covered, which affects some international versions (LP2 and LP3 models).

Features

- Connect directly to CradlePoint with included cable and connector
- Multi-band versatility
- Easy to install 4" Magnet Mount Antenna
- Removable - transfer from one vehicle to another
- Omni-directional
- Weatherproof
- Requires Metal Mount Plane (Minimum 3.5 in. Diameter)
- 12.5 feet of cable

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4” Mini mag-mount antenna with 12.5 foot cable

How It Works

CradlePoint’s Dual-Band Omni-Directional Antenna will collect the cell tower signal and send it through the cable to the integrated or embedded CradlePoint modem and router. When the modem transmits, the signal is transferred directly to the antenna and broadcasted back to the cell tower.

Installing the Magnet-Mount Antenna

Attach the Magnet-Mount Antenna to any metal area on top of the roof of the vehicle. The best location is clear of obstacles and as high on the vehicle as possible. Although small, the rare earth magnet is quite strong and won’t fall off at high speeds. Make sure the area under the magnet is clean so as not to damage the vehicle’s paint and to ensure a strong connection. Bring the cable into the vehicle through a door frame – the cable is protected by the door’s rubber molding. Do not run the cable through a window because when the window is rolled up and the door is opened the antenna cable will be pulled – this is likely to destroy your antenna and/or scratch your paint. Connect the magnet-mount antenna cable to the CradlePoint router antenna port.

30-Day Money-Back Guarantee

All CradlePoint products are protected by CradlePoint’s 30-day money-back guarantee. If for any reason the performance of any product is not acceptable, simply return the product directly to the reseller with a dated proof of purchase.

90-Day Warranty

CradlePoint antennas are warranted for ninety (90) days against defects in workmanship and/or materials. Warranty cases may be resolved by returning the product directly to the reseller with a dated proof of purchase.

Antennas may also be returned directly to CradlePoint at the consumer’s expense, with a dated proof of purchase and a Returned Material Authorization (RMA) number supplied by CradlePoint. CradlePoint shall, at its option, either repair or replace the product. CradlePoint will pay for delivery of the repaired or replaced product back to the original consumer if located within the continental U.S.

This warranty does not apply to any antennas determined by CradlePoint to have been subjected to misuse, abuse, neglect, or mishandling that alters or damages physical or electronic properties.

Antenna Specifications

Part Number: 170606-000

Frequency Range: 700–800 MHz, 824–894 MHz, 880–960 MHz, 1710–1880 MHz, 1850–1990 MHz, 2110-2170 MHz

Impedance: 50 ohms

Antenna Gain: 700–800 MHz, 1.7 dBi / 824–894 MHz, 2.12 dBi / 880–960 MHz, 1.5 dBi / 1710–1880 MHz, 3.12 dBi / 1850–1990 MHz, 3.12 dBi / 2110–2170 MHz, 1.4 dBi

Radiation: Omni-directional

Polarization: Vertical

Ground Plane: Metal Ground Plane required (minimum 3.5 inch diameter)

Connector: SMA Male

Material: Whip – Plastic-coated steel wire

Coaxial Cable: RG174 12.5 feet / 3.8 meters

Height: 4.2 inches / 10.6 cm

Mount: Rare earth magnet

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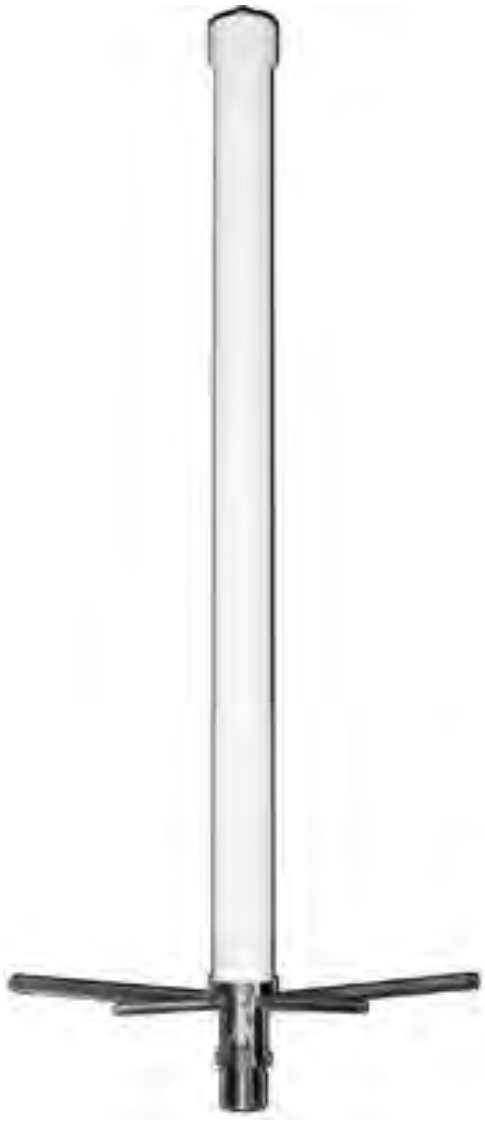
CradlePoint Antenna Ordering and Installation Guide

Multi-Band Omni-Directional Antenna

50 ohm
Part # 170586-000

For use with all AER, ARC, and COR products with integrated modems.

NOTE: LTE band 7 (2600 MHz) not covered, which affects some international versions (LP2 and LP3 models), and poor performance for 2100 MHz, which affects some U.S. versions (LPE).



Features

- High-gain
- Weather resistant
- Built-in ground plane
- Slim and unobtrusive
- Mounting bracket included
- Installs easily
- For fixed installations
- About 8” of cable

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Multi-Band Omni-Directional Antenna

How It Works

CradlePoint's Dual-Band Omni-Directional Antenna will collect the cell tower signal and send it through the cable to the integrated or embedded CradlePoint modem and router. When the modem transmits, the signal is transferred directly to the antenna and broadcasted back to the cell tower.

Thank you for purchasing a CradlePoint Antenna

Please read all instructions before installing your antenna, and check the parts supplied against those listed in this guide. CradlePoint's weatherproof, fiberglass-encased antenna is omni-directional and ideal for many exterior building locations, such as homes, offices, stores and warehouses.

The innovative design results in high efficiency and low signal loss, which means more signal to your router's modem. This multi-band, high-performance, omni-directional antenna supports multiple frequencies (specifications below). It is backed by CradlePoint's 30-day money-back guarantee and 1-year limited warranty.

Package Contents

1 – Multi-Band Omni-Directional Antenna
1 – L-Bracket
1 – U-bolt assembly
1 – N Female – FME Male Connector
6 – Radials (3 short, 3 long)
4 – 10x1 Phillips round screws
1 – Thread-locker liquid

Determine Your Mounting Location

The antenna should be mounted high on the building with no obstructions. There is a compromise between installing the antenna as high as possible and keeping the cable run short to reduce signal loss. (The longer your cable, the greater the signal loss will be.) For cable runs of less than 20 feet (recommended), CradlePoint recommends JEFA Tech LL400 cable with N Male, SMA Male connectors (not sold by CradlePoint). CradlePoint has tested 20 and 50 foot cables from JEFA Tech and suggests using this configuration. Using less expensive (often higher loss) cables or using extra adapters with other cables may result in significantly reduced performance.

Make sure your mounting location is as far away as possible from other antennas and upright objects such as flagpoles. Be careful not to kink or crush the antenna cable or bend it tightly during installation. This can lead to poor performance and signal loss. It is important to mount the antenna vertically; mounting horizontally or at an angle will significantly degrade performance.

When two antennas are used, there must be at least 1' (12 inches) separation between the edges of the two antennas. This spacing will provide enough spatial diversity in outdoor environment for MIMO/diversity operation.

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Multi-Band Omni-Directional Antenna

Mount the Antenna

Apply a small amount of thread-locker liquid to the threads on each of the six radials and screw them into the holes at the base of the antenna. Attach the supplied L-bracket to a sturdy vertical surface using four screws. It may also be attached to a pole with the supplied U-bolt assembly (Figure 1). Remove the hex-nut and lock-washer from the base of the antenna, thread the antenna cable through the large hole in the L-bracket, slip the lock washer and hex-nut over the end of the cable and tighten against the underside of the L-bracket to hold the antenna securely (Figure 2).

Warning: Lightning protection is recommended for all installations (Not sold by CradlePoint). JEFA Tech offers one: jefatech.com/category/cradlepoint. *Wilson Electronics offers one compatible with this device: Wilson Part# 859988. Take extreme care to ensure that neither you nor the antenna comes near any electric power lines.*

Figure 1

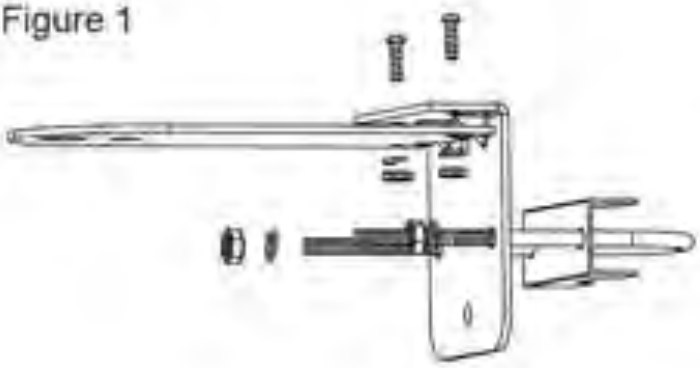
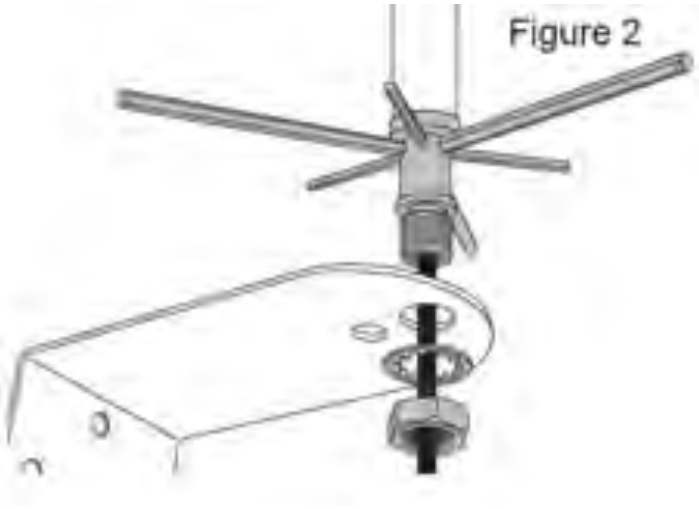


Figure 2



Connect the Cable

Attach the FME male to N female adapter to the antenna cable connector **FINGER TIGHT ONLY**. Connect the coax extension cable (sold separately) to the antenna cable (N male side), route the extension cable to the router location and connect to the modem antenna connectors (SMA male side).

Technical Support

Visit knowledgebase.cradlepoint.com

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Multi-Band Omni-Directional Antenna

30-Day Money-Back Guarantee

All CradlePoint products are protected by CradlePoint's 30-day money-back guarantee. If for any reason the performance of any product is not acceptable, simply return the product directly to the reseller with a dated proof of purchase.

90-Day Warranty

CradlePoint antennas are warranted for ninety (90) days against defects in workmanship and/or materials. Warranty cases may be resolved by returning the product directly to the reseller with a dated proof of purchase.

Antennas may also be returned directly to CradlePoint at the consumer's expense, with a dated proof of purchase and a Returned Material Authorization (RMA) number supplied by CradlePoint. CradlePoint shall, at its option, either repair or replace the product. CradlePoint will pay for delivery of the repaired or replaced product back to the original consumer if located within the continental U.S.

This warranty does not apply to any antennas determined by CradlePoint to have been subjected to misuse, abuse, neglect, or mishandling that alters or damages physical or electronic properties.

Antenna Specifications

Part Number: 170586-000

Frequency Range: 700–800 MHz / 824–894 MHz / 880–960 MHz / 1850–1990 MHz

Impedance: 50 ohms

Antenna Gain: 3.2 dBi 700–800 MHz / 5.1 dBi 824–894 MHz / 2.7 dBi 880–960 / 0.6 dBi 1710–1880 MHz / 6.1 dBi 1850–1990 MHz / −7.5 dBi 2110–2170 MHz

Radiation: Omni

Polarization: Vertical

Ground Plane: Built-in

Connector: FME Female (includes FME male to N female adapter)

Material: Whip – stainless steel / Casing – Fiberglass

Height: 18 inches / 45.7 cm

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CradlePoint Antenna Ordering and Installation Guide

Outdoor Panel Antenna (Directional Patch)

Part # **170587-000**

For use with all AER, ARC, and COR products with integrated modems.

Features

- High-gain
- Directional
- Pipe mounting hardware included
- Installs easily
- Weather resistant
- Wide bandwidth
- 50 Ohms
- VSWR: 2.0 max
- About 8” of cable

Disclaimer: The information provided by CradlePoint is believed to be complete and accurate. However, no responsibility is assumed by CradlePoint, Inc. for any business or personal losses arising from its use, or for any infringements of patents or other rights of third parties that may result from its use.

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Outdoor Panel Antenna (Directional Patch)

How It Works

CradlePoint's Outdoor Directional Panel Antenna (Patch) will collect the cell tower signal and send it through the cable to the integrated or embedded CradlePoint modem and router. When the modem transmits, the signal is transferred directly to the antenna and broadcasted back to the cell tower.

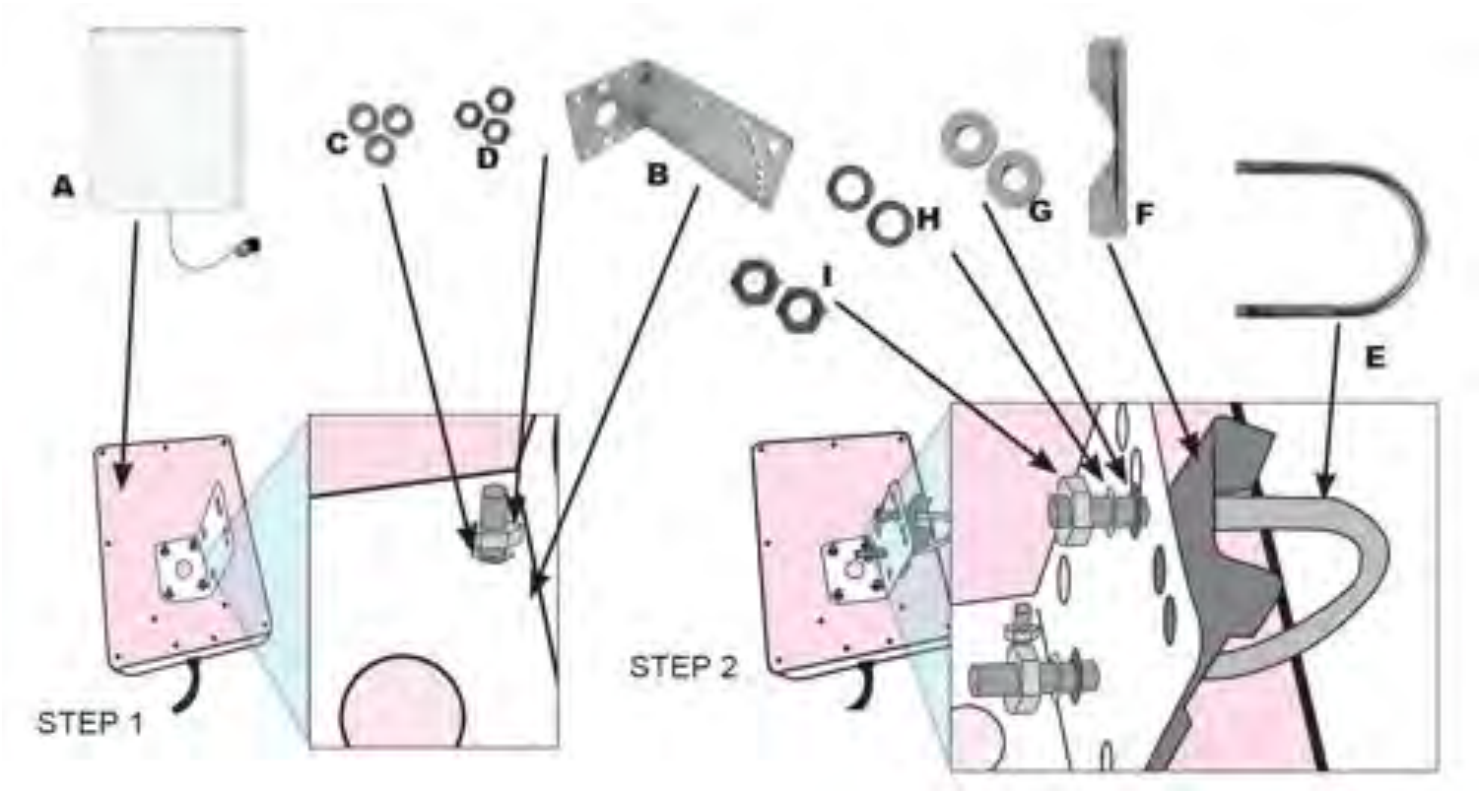
Thank you for purchasing a CradlePoint Antenna

Please read all instructions before installing your antenna, and check the parts supplied against those listed in this guide. CradlePoint's weather resistant, encased antenna is an outdoor directional panel antenna ideal for many exterior building locations, such as homes, offices, stores and warehouses.

The innovative design results in high efficiency and low signal loss, which means more signal to your router's modem. This multi-band, high-performance, directional antenna supports multiple frequencies (specifications below). It is backed by CradlePoint's 30-day money-back guarantee and 1-year limited warranty.

Package Contents

(A) Outdoor Panel Antenna
(B) Pole Mounting Bracket
(C) 3 – Small Washers
(D) 3 – Bracket nuts
(E) 1 – U-Bolt
(F) 1 – Pipe Bracket
(G) 2 – Washers
(H) 2 – 1/4" Split-Lock Washers
(I) 2 – 2 - 1/4"-20 nuts



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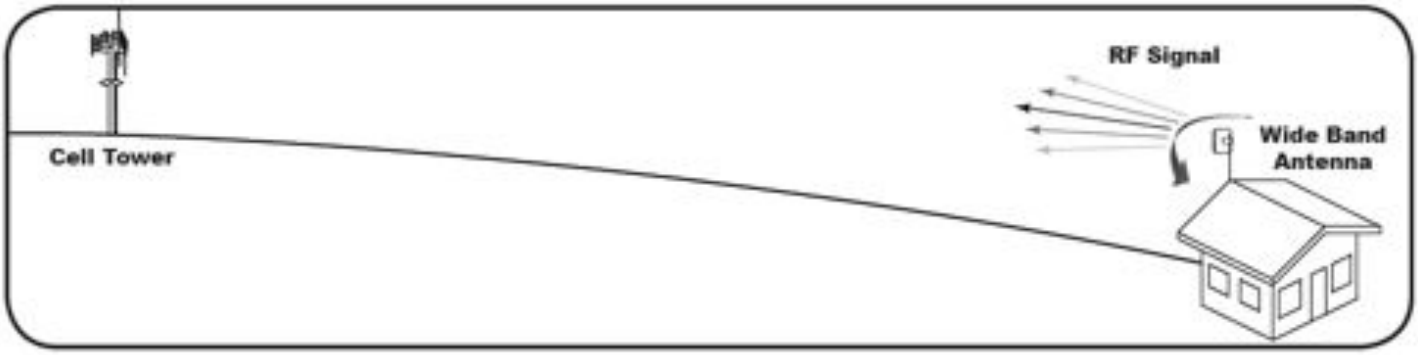
Antenna Installation

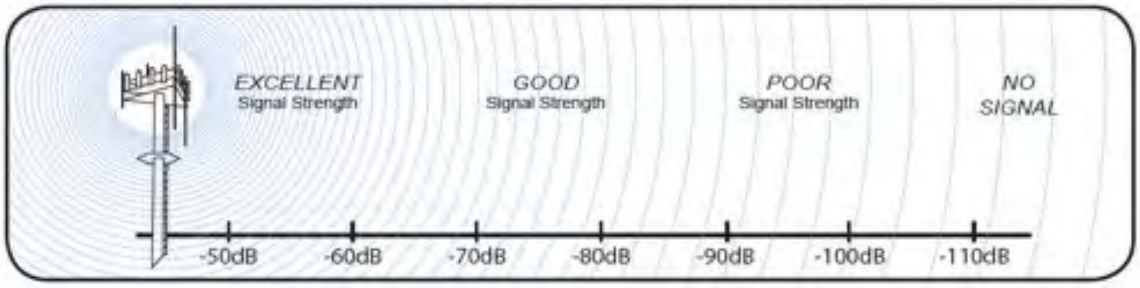
The antenna should be mounted as shown in the illustration above. The included mounting bracket is adjustable and will accommodate pipe diameters from 1.25" to 2" (pipe not included). Mount the antenna so that there is at least 3 feet of clearance in all directions around it. Position the antenna so that it has the most unobstructed line of sight to the cellular service provider's strongest signal. There is a compromise between installing the antenna as high as possible and keeping the cable run short to reduce signal loss. (The longer your cable, the greater the signal loss will be.) For cable runs of less than 20 feet (recommended), CradlePoint recommends JEFA Tech LL400 cable with N Male, SMA Male connectors (not sold by CradlePoint). CradlePoint has tested 20 and 50 foot cables from JEFA Tech and suggests using this configuration. FINGER TIGHT ONLY. Using less expensive (often higher loss) cables or using extra adapters with other cables may result in significantly reduced performance. When two antennas are used, there must be at least 1' (12 inches) separation between edges of two antennas. This spacing will provide enough spatial diversity in outdoor environment for MIMO/diversity operation. Both antennas should focus the main beam in the same direction of strong cellular signal.

Warning: Lightning protection is recommended for all installations (Not sold by CradlePoint). JEFA Tech offers one: jefatech.com/category/cradlepoint. *Wilson Electronics offers one compatible with this device: Wilson Part# 859988. Take extreme care to ensure that neither you nor the antenna comes near any electric power lines.*



Adjusting the Antenna for Maximum Performance

To adjust the antenna for best performance, connect it to your router and log into the router (http://192.168.0.1) and access the modem signal strength page. Turn the antenna in 10-degree increments while checking the signal level (dBi). At each point you may need to wait a few seconds as the display updates. Signal readings appear as a negative number (for example, –86). The larger the number, the more powerful the signal (–75 is stronger than –84). Once you have obtained the strongest signal, fully tighten the mounting hardware. Disconnect the cable and route the extension cable to the router location and reconnect. Weatherproof all connections.



Technical Support

Visit knowledgebase.cradlepoint.com

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Outdoor Panel Antenna (Directional Patch)

30-Day Money-Back Guarantee

All CradlePoint products are protected by CradlePoint's 30-day money-back guarantee. If for any reason the performance of any product is not acceptable, simply return the product directly to the reseller with a dated proof of purchase.

90-Day Warranty

CradlePoint antennas are warranted for ninety (90) days against defects in workmanship and/or materials. Warranty cases may be resolved by returning the product directly to the reseller with a dated proof of purchase.

Antennas may also be returned directly to CradlePoint at the consumer's expense, with a dated proof of purchase and a Returned Material Authorization (RMA) number supplied by CradlePoint. CradlePoint shall, at its option, either repair or replace the product. CradlePoint will pay for delivery of the repaired or replaced product back to the original consumer if located within the continental U.S.

This warranty does not apply to any antennas determined by CradlePoint to have been subjected to misuse, abuse, neglect, or mishandling that alters or damages physical or electronic properties.

Antenna Specifications

Part Number: 170587-000

Frequency Range: 700–800 MHz / 824–894 MHz / 880–960 MHz / 1710–1880 MHz / 1850–1990 MHz / 2110–2170 MHz / 2400–2700 MHz

Nominal Impedance: 50 ohms

Antenna Gain: 5.2 dBi 700–800 MHz / 4.4 dBi 824–894 MHz / 4.2 dBi 880–960 MHz / 10.1 dBi 1710–1880 MHz / 10.6 dBi 1850–1990 MHz / 8.2 dBi 2110–2170 MHz / 8 dBi 2400–2700 MHz

Horizontal Beamwidth: 70 degrees

Vertical Beamwidth: 50 degrees

Polarization: Vertical

Maximum Power: 100 watts

Connector: N-Female (requires cable to connect to CradlePoint router)

Dimension: 210 x 180 x 44 mm

Weight: 600 g

Radome Material: UV Protection ABS

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CradlePoint Antenna Ordering and Installation Guide

700 MHz – 2700 MHz
Wide Band Directional Antenna (Yagi/Log-Periodic)

Part # 170588-000

For use with all AER, ARC, and COR products with integrated modems.

Features

- High-gain
- Directional
- Pipe mounting hardware included
- Installs easily
- Weather resistant
- Wide bandwidth
- 50 Ohms
- VSWR: 1.5 Max
- About 8” of cable

Disclaimer: The information provided by CradlePoint is believed to be complete and accurate. However, no responsibility is assumed by CradlePoint, Inc. for any business or personal losses arising from its use, or for any infringements of patents or other rights of third parties that may result from its use.

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700 MHz – 2700 MHz Wide Band Directional Antenna (Yagi/Log-Periodic)

How It Works

CradlePoint's Wide Band Directional Antenna (Log-Periodic) will collect the cell tower signal and send it through the cable to the integrated or embedded CradlePoint modem and router. When the modem transmits, the signal is transferred directly to the antenna and broadcasted back to the cell tower.

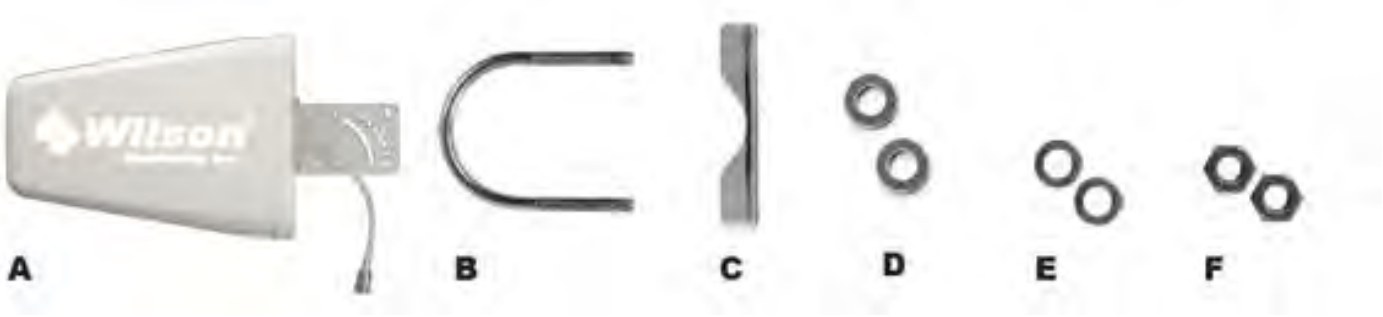
Thank you for purchasing a CradlePoint Antenna

Please read all instructions before installing your antenna, and check the parts supplied against those listed in this guide. CradlePoint's weather resistant, encased antenna is wide band log periodic directional and ideal for many exterior building locations, such as homes, offices, stores and warehouses.

The innovative design results in high efficiency and low signal loss, which means more signal to your router's modem. This multi-band, high-performance, directional antenna supports multiple frequencies (Specifications below). It is backed by CradlePoint's 30-day money-back guarantee and 1-year limited warranty.

Package Contents

(A) Wide Band Log Periodic Directional Antenna & L Bracket
(B) 2 – U-Bolts
(C) 2 – Pipe Brackets
(D) 4 – 1/4" Washers
(E) 4 – 1/4" Split-Lock Washers
(F) 4 – 1/4"-20 nuts



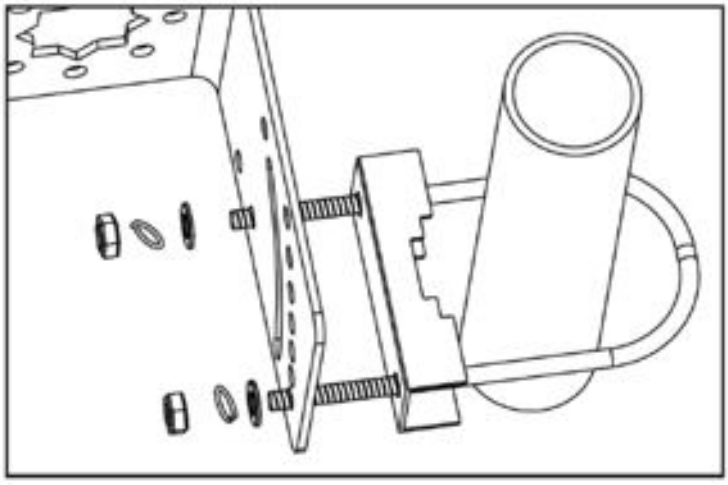
Antenna Mounting Instructions

1 – Install U-Bolt **(B)** on pole.
2 – Slide Pipe Clamp **(C)** over U-Bolt **(B)** Flat side away from pipe.
3 – Slide antenna bracket **(A)** onto U-Bolt **(B)** in desired location.

> ***Note:*** *Antenna may be installed on a variety of pipe angles, insure antenna is pointing at cell tower and is vertical with the drip hole at the bottom.*

4 – Install Flat washer **(D)**, split lock washer **(E)** and nut **(F)**, tighten as appropriate.

> ***Note:*** *A second U-Bolt assembly has been included to strengthen antenna mounting in windy areas. Repeat steps 1 through 4 to install.*



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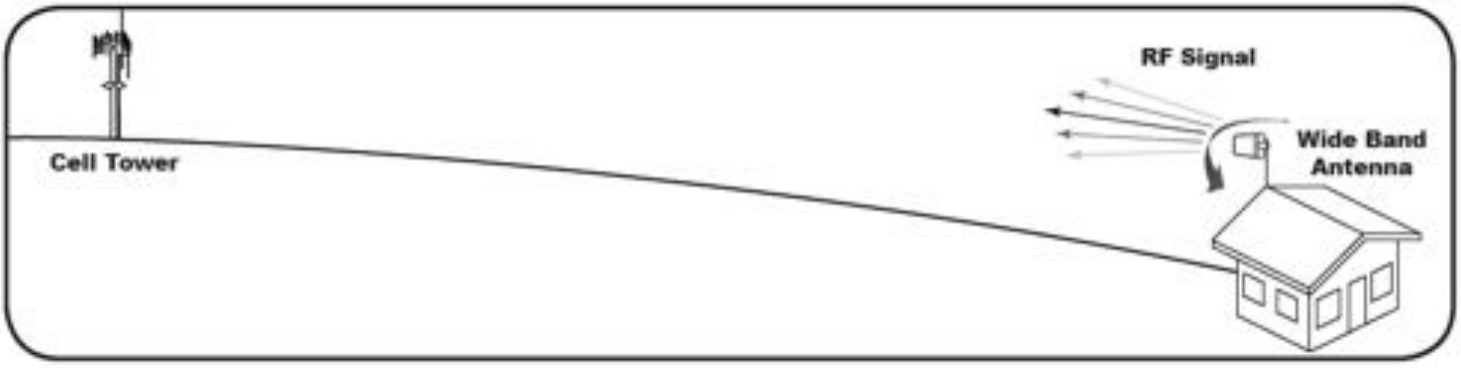
Antenna Installation

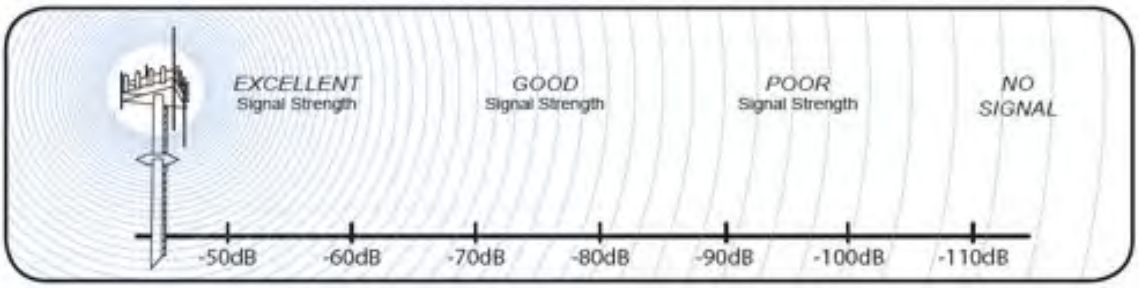
The antenna should be mounted as shown in the illustration above. The included mounting bracket is adjustable and will accommodate pipe diameters from 1.25” to 2” (pipe not included). Mount the antenna so that there is at least 3 feet of clearance in all directions around it. Position the antenna so that it has the most unobstructed line of sight to the cellular service provider’s strongest signal. There is a compromise between installing the antenna as high as possible and keeping the cable run short to reduce signal loss. (The longer your cable, the greater the signal loss will be.) For cable runs of less than 20 feet (recommended), CradlePoint recommends JEFA Tech LL400 cable with N Male, SMA Male connectors (not sold by CradlePoint). CradlePoint has tested 20 and 50 foot cables from JEFA Tech and suggests using this configuration. FINGER TIGHT ONLY. Using less expensive (often higher loss) cables or using extra adapters with other cables may result in significantly reduced performance. When two antennas are used, there must be at least 1’ (12 inches) separation between the edges of the two antennas. This spacing will provide enough spatial diversity in outdoor environments for MIMO/diversity operation. Both antennas should focus the main beam in the same direction of strong cellular signal.

Warning: Lightning protection is recommended for all installations (not sold by CradlePoint). JEFA Tech offers one: jefatech.com/category/cradlepoint. *Wilson Electronics offers one compatible with this device: Wilson Part# 859988. Take extreme care to ensure that neither you nor the antenna comes near any electric power lines.*



Adjusting the Antenna for Maximum Performance

To adjust the antenna for best performance, connect it to your router and log into the router (http://192.168.0.1) and access the modem signal strength page. Turn the Antenna in 10-degree increments while checking the signal level (dBi). At each point you may need to wait a few seconds as the display updates. Signal readings appear as a negative number (for example, –86). The larger the number, the more powerful the signal (–75 is stronger than –84). Once you have obtained the strongest signal, fully tighten the mounting hardware. Disconnect the cable and route the extension cable to the router location and reconnect. Weatherproof all connections.



Technical Support

Visit knowledgebase.cradlepoint.com

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700 MHz – 2700 MHz Wide Band Directional Antenna (Yagi/Log-Periodic)

30-Day Money-Back Guarantee

All CradlePoint products are protected by CradlePoint's 30-day money-back guarantee. If for any reason the performance of any product is not acceptable, simply return the product directly to the reseller with a dated proof of purchase.

90-Day Warranty

CradlePoint antennas are warranted for ninety (90) days against defects in workmanship and/or materials. Warranty cases may be resolved by returning the product directly to the reseller with a dated proof of purchase.

Antennas may also be returned directly to CradlePoint at the consumer's expense, with a dated proof of purchase and a Returned Material Authorization (RMA) number supplied by CradlePoint. CradlePoint shall, at its option, either repair or replace the product. CradlePoint will pay for delivery of the repaired or replaced product back to the original consumer if located within the continental U.S.

This warranty does not apply to any antennas determined by CradlePoint to have been subjected to misuse, abuse, neglect, or mishandling that alters or damages physical or electronic properties.

Antenna Specifications

Part Number: 170589-000

Frequency Range: 700–800 MHz / 800–915 MHz / 915–1710 MHz / 1710–1850 MHz / 1850–1990 MHz / 1990–2700 MHz

Nominal Impedance: 50 ohms

Antenna Gain: 8.0 dBi 700–800 MHz / 8.0 dBi 800–915 MHz / 7.0 dBi 915–1710 MHz / 9.0 dBi 1710–1850 MHz / 10.5 dBi 1850–1990 MHz / 10.0 dBi 1990–2700 MHz

Horizontal Beamwidth: 70 to 90 degrees

Vertical Beamwidth: 85 to 110 degrees

F/B ratio: >20 dB

Polarization: Vertical

Maximum Power: 100 watts

Connector: N-Female (requires cable to connect to CradlePoint router)

Dimension: 11.4" x 8.3" x 2.6"

Weight: 3.3 lbs

Temperature Range: −40 to 158 °F (−40 to 70 °C)

Rated Wind Velocity: 134 MPH

Lightning protection: DC grounded

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